

ABSTRACT

The doped silica core region of a core rod for an optical fiber preform is protected against unwanted fluorine doping during fluorine doping of the outer silica layer by selectively consolidating the core region prior to fluorine doping.

5 Due to dopants in the core region, the soot in the core region consolidates before the soot in the outer undoped region. This inherent property allows the entire core rod to be heated prior to fluorine doping resulting in selective partial consolidation and preventing fluorine doping of the doped center core region.

The process time required may be reduced by using incremental fluorine doping.

10 In the incremental doping process the doping step is separated into a deposit step, where “excess” fluorine is deposited on the silica particles, and a drive-in step where atomic fluorine is distributed into the silica particles. The drive-in step is conveniently combined with the sintering or consolidation step to further enhance the efficiency of the doping process.

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